

**What Is Claimed Is:**

1. A system of geostationary satellite orbits coordinatable with a geostationary belt of satellite positions having a plurality of geostationary slots, said system comprising:
  - a plurality of satellites forming coordinatable system of geostationary satellite orbits that provide satellite coverage continuously within a specified service area;
  - each satellite position being located in one of said plurality of geostationary slots and generating a plurality of beams in a respective group of cells; and
  - a tiling pattern for use on the surface of the earth, said tiling pattern having a plurality of cells corresponding to said plurality of beams, each of said cells having a defined frequency for communication and a frequency reuse spacing, wherein at least one beam formed from a first of the plurality of satellites is directed to a group of cells formed from a second of the plurality of satellites.
2. A system as recited in claim 1 further comprising a first satellite occupying a first geostationary slot generating a first set of uniform beams, and a second satellite occupying a second geostationary slot generating a second set of uniform beams.
3. A system as recited in claim 2 wherein said first set of beams and said second set of beams have a width of 0.5 degrees.
4. A system as recited in claim 1 wherein said cells have an area that is proportional to latitude on the surface of the Earth.
5. A system as recited in claim 1 wherein said tiling pattern is continuous.

6. A system as recited in claim 1 wherein a tiling pattern first set of parameters for forming a tiling pattern includes a reuse pattern.

7. A system as recited in claim 1 wherein said tiling pattern comprises a plurality of hexagons.

8. A satellite system as recited in claim 1 wherein said first orbital slot and said second orbital slot are coextensive.

9. A satellite system as recited in claim 1 wherein the first satellite and the second satellite form a fixed satellite service.

10. A satellite system as recited in claim 1 wherein the first satellite and the second satellite form a broadcast satellite service.

11. A satellite system as recited in claim 1 wherein a first subset beams of the plurality of beams sharing a same frequency band have a substantially uniform signal power and a uniform  $C/(N+I)$  requirement, where C is an intended signal power, N is the noise power due to various natural thermal processes and I is a power due to all interfering signals occupying the same frequency band as the intended signal.

12. A satellite system as recited in claim 1 wherein the tiling pattern forms regularly distributed cell rings.

13. A satellite system as recited in claim 1 wherein forming a tiling pattern comprises forming the tiling pattern from regularly distributed cell rings.

14. A method of operating a satellite system comprising the steps of:

defining a tiling pattern for use on the surface of the earth having a number of cells;

5 generating a first set of beams from a first satellite, each of the beams directed to a first group of the cells;

generating a second set of beams from a second satellite, each of the beams in said second set of beams directed to a second group of the cells, wherein at least one of the beams from the second set of beams is directed to  
10 one in the first group of cells; and

coordinating coverage from said first set of beams and said second set of beams to avoid interference between the first set of beams and the second set of beams.

15. A satellite system comprising:

a plurality of orbit slots having a first orbit slot and a second orbit slot;

a tiling pattern for use on the surface of the Earth, said tiling  
5 pattern having a plurality of cells, each of said cells having a defined frequency for communication;

a first satellite occupying a first orbit slot generating a first set of beams directed to a first group of the plurality of cells;

a second satellite occupying a second orbital slot generating a  
10 second set of beams directed to a second group of cells, wherein at least one of the beams from the second set of beams is directed to one in the first group of cells; and

said first set of beams and said second set of beams being  
generated according to predetermined parameters to avoid interference between  
15 said first set and said second set of beams.